Methods: A total of 372 consecutive patients (mean age: 61.6±12.4 years) who presented with an AMI were prospectively enrolled. Echocardiographic evaluation was carried out within 24-36 hours. Six basal LV segments were explored by pulsed tissue Doppler imaging (TDI) for electromechanical delays. Intraventricular mechanical delay (IMD) was then calculated from the difference between the earliest and most delayed sites. Correlations were assessed by the nonparametric Spearman rho test, and means were compared using Kruskall-Wallis and Mann-Whitney tests were used for correlations and

Results: The IMD (30.3ms±13.72ms) was not correlated to the location and extent of the AMI. The IMD was correlated to the cardiac output (Rho=–0.27, p=0.003) and to the mitral annular systolic velocity (lateral: Rho=0.18, p=0.027 and septal: Rho=–0.37, p<0.0001) but not significantly to the LV ejection fraction (Rho=–0.08, p=0.31). The IMD was also correlated to diastolic parameters: the mitral annular early diastolic velocity (E') (Rho=–0.26, p=0.002) and the early diastolic mitral flow velocity/ late diastolic mitral flow velocity ratio (E/A) (Rho=–0.18, p=0.03). The IMD was correlated as well to the LV myocardial performance index measured by conventional Doppler (Rho=–0.29, p<0.0001) or by TDI method (Rho=–0.26, p=0.002). Patients with an IMD > 42.5ms had a higher rate of in-hospital heart failure (35.0% versus 4.7%, p<0.0001) with a hazard ratio (HR) = 10.9 (95% confidence interval 3.2 to 37.2).

Conclusion: acute dyssynchrony in patients with AMI could be a marker or a factor of cardiac dysfunction.

0542

Prevalence of atrial fibrillation during dobutamine stress echocardiography

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Background: Dobutamine stress echocardiography (DSE) is a widely used echocardiographic examination for assessment of coronary ischemia, but several complications or side effects of DSE have been reported. The aim of this study was to assess the prevalence of atrial fibrillation (AF) during DSE.

Methods: Over a 9-year period (from November 2001 to October 2010) we reviewed all patients (n =2,224) referred for DSE. Criteria for selection included patients >18 years old who underwent DSE. We systematically analyzed all ECG performed during DSE to detect AF during the examination.

Results: DSE was completely performed in 2,179 patients (mean age: 62.4±11.6 y.o.): 694 positive DSE and 1,485 negative DSE. AF was observed in 18 patients (14 men, mean age: 79.6±9.0 y.o.): 4 patients (22%) had a previous history of paroxysmal AF and 16 patients (89%) hypertension. Prevalence of AF during DSE was 0.8%. AF was more frequently observed in case of positive DSE (p<0.0005). Patients with AF during DSE were significantly older (p<0.0001) and prevalence of AF during DSE increased with age: 0.45% in patients 60 to 69 years, 1.3% in patients 70 to 79 years and 4% in patients >80 years.

Conclusion: Prevalence of atrial fibrillation during DSE is 0.8% and its occurrence increases with age.

0554

Contribution of the simplified proximal isovelocity surface area method in the evaluation of mitral stenosis

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Introduction: Echocardiographic measurement of mitral valve area (MVA) in the mitral stenosis (MS) is done by several methods including the proximal isovelocity surface area (PISA). The aim of our study is to verify the validity of a simplified formula (simplified PISA) based on a fixed value of angle alpha by comparing in a group of patients with rheumatic MS the reliability of the simplified PISA method versus the two-dimensional planimetry, to determine the effect of the presence of atrial fibrillation (AF), a mitral regurgitation (MR) ≥2, an aortic insufficiency (AI) ≥2, the valvular redesign and the degree of MS on the accuracy of the simplified PISA method.

Material and methods: This is a prospective study of 110 patients (78 females and 32 males) having rheumatic MS with a mean age of 47 years [22; 89]. 65 of them (59%) were in sinus rhythm, 25 patients (23%) had an MR ≥2, four patients (1.8%) had an AI ≥2, seventy patients (63.6%) had a Wilkins score ≥8 and 35 patients (32%) had non severe MS (SM >1.5cm²). The MVA was measured by planimetry then by PISA in all patients. The simplified PISA was calculated based on an angle alpha=100 ° in all our patients.

Results: There is no statistically significant difference (p<0,001) between the mean mitral valve areas measured by simplified PISA (1.30± 0.38cm²) and those measured by planimetry (1.37cm²±0.34). The correlation between planimetry and simplified PISA is excellent (r=0.93) even in the presence of AF (r=0.884, p<0,001), MR ≥2 (r=0,833; p<0,001) and a Wilkins score ≥8 (r=0.86; p<0.01). Our results are not statistically interpretable for AI≥2 because of the reduced number of patients. The correlation between the simplified PISA and planimetry is rather bad in the case of non severe MS (r=0.22). We found a good correlation between the MVA measured by simplified PISA compared to the PISA with corrected angle (r=0.86; p =0.04).

Conclusion: The simplified PISA provides a reliable measurement of the MVA during the MS whatever the anatomic and clinical conditions of MS. T

0557

Study of a new indice in pulmonary hypertension: index of tricuspid displacement

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Introduction: This study intends to demonstrate the value of a new index, the index of tricuspid displacement (IDT), as measured by the ratio of ITVS at the lateral tricuspid annulus and the distance between it and the tip of the RV. The aim of this work is to define a standard for the IDT and to correlate it with prognosis parameters of PAH, as well as indices of RV function.

Method: 66 patients included: 32 cases with PAH and 34 controls. An echocardiogram was performed for each of them and a BNP's measurement within 6 hours. We precised the importance of symptoms by NYHA functional stage.

Results: The two groups are statistically comparable concerning the criteria of age, sex, BMI and left filling pressures (by E/Ea mitral). They are significantly different on the other indices. The values of the IDT are lower in cases compared with controls (respectively: 0.21 vs 0.36 (p<0.001). The correlation of this new index is good with TAPSE, peak of S, ITVS, and with POD (r respectively: 0.5, 0.6, 0.9, 0.65). We also note that the median of the IDT is significantly lower in patients with effusion compared to those without pericardial effusion: 0.187 vs. 0.253 (p<0.001). The correlation of our index, although not significant with the BNP, the Tei, SOD, the FRSVD and cardiac index (r respectively: 0.30, 0.32, 0.2, 0.34, 0.25), remains better compared to the peak of the S wave with the same parameters (r respectively: 0.19, 0.28, 0.16, 0.33, 0.26). Moreover, a threshold of IDT to 0.27 predicts a BNP>180 with good sensitivity, specificity and AUC, while a threshold of 0.19 identifies the most serious patients in stage IV of the NYHA. ROC curves show poorer results for the peak of the S wave with the same cutoff of BNP and also to predict the most serious patients with NYHA IV.

Conclusion: The index of tricuspid displacement showed encouraging results in terms of prognostic parameter in PAH and evaluation of right ventricular function.